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Connecticut General Assembly, Environment and Transportation Committees
State Capitol, Hartford, Connecticut 06106-1562

Comments in Support of H.B. 5039 An Act Concerning Medium and Heavy-Duty Emission Standards

Good morning/afternoon:

I want to thank Chair Cohen, Chair Gresko, Vice-Chair Slap and Vice-Chair Palm; Chair Lemar, Chair Haskell, Vice-Chair Cassano and Vice-Chair Simms; along with the ranking members and members of the Environment and Transportation Committees for hearing testimony on these important bills today.

My name is Paulina Muratore, and I am a transportation campaign manager and policy advocate with the Union of Concerned Scientists. UCS is a national non-profit organization that puts, rigorous, independent science to work to solve some of our planet's most pressing problems.

Today, on behalf of our 4,763 activists and Science Network members in Connecticut, I am testifying in support of Senate Bill 4 and House Bill 5039. We think these bills are critical steps in the right direction as Connecticut continues to address the largest source of pollution in the state: transportation.

The Truck Pollution Problem: Big Trucks, Even Bigger Impacts

As you know, the transportation sector is now the largest source of global warming pollution in Connecticut and is the key sector to focus on in order to reach climate goals and achieve co-benefits such as clean air and healthier communities. As you've heard, transportation emissions are responsible for a dual problem: climate pollution and local air pollution.

When fossil fuels and oxygen meet in a traditional combustion engine, water and global warming inducing carbon dioxide are emitted. Alongside this process, high heat also causes nitrogen in the air to oxidize into smog and soot-forming nitrogen oxides (NOx). Unavoidable, incomplete combustion releases smaller carbon particles with hundreds of other chemical elements such as fine particulate matter (PM2.5). While the greenhouse gas emissions (such as carbon dioxide) impact the atmosphere leading to climate change, the other particles such as NOx and PM2.5 hang in the air locally, leading directly to negative health impacts. Even if all states around and upwind of Connecticut achieved zero transportation emissions, vehicles using gasoline and diesel in Connecticut would continue to lead to both climate and local air pollution – alongside the negative health impacts.

While heavy-duty trucks represent only 6% of all vehicles on the road in Connecticut, but they are disproportionately responsible for local air pollution. UCS analysis has shown that these vehicles make up 53% of on-road nitrogen oxide (NOx) emissions and 45% of on-road fine particulate matter (PM2.5) emissions, and 25% of on-road greenhouse gas emissions. These results align with a report released this week by the Connecticut Department of Energy and Environmental Protection, in their assessment that examined the need to adopt California's medium and heavy-duty vehicle emission standards.

Trucks and buses also use more fuel per mile, and drive more miles every year than personal vehicles, resulting in the use of a huge amount of diesel fuel. To put this in perspective, in 2017, diesel transit buses averaged 4.0 miles per gallon

(mpg); tractor (semi) trucks, 6.0 mpg; and single-unit trucks (i.e., non-semi-trucks), 7.4 mpg, while cars averaged 24.2 mpg. Additionally, the average semi-truck travels over 60,000 miles per year (with newer trucks traveling close to 90,000 miles per year), compared to less than 12,000 miles for the average passenger car.

The proposed regulations that you're hearing comment on today are feasible, economical, and represent a timely means of achieving necessary reductions in air pollution, improving public, and helping Connecticut meet its ambitious climate targets. A recent study from the Union of Concerned Scientists, the Natural Resources Defense Council and MJ Bradley and Associates showed that by adopting the ACT rule along with heavy-duty NOx limits, Connecticut could see net cumulative societal benefits of over $4.3 billion by 2050. What's more, by moving forward with this bill and allowing DEEP to adopt the ACT and HDO rules, Connecticut will join six other states (CA, WA, OR, NY, NJ, MA) that have already adopted these important regulations. This momentum is crucial.

How Clean Trucks Can Benefit Connecticut

Under the ACT rule, Connecticut will be able to ensure that a growing number of electric trucks and buses hit the road beginning in 2026, and under the HDO rule, will ensure that toxic air pollution is minimized from the diesel engines that remain on the road. Adopting these rules will put Connecticut well on the path to a cleaner and more efficient transportation future.

By 2030, nearly 30 percent of all medium- and heavy-duty sales in Connecticut will be zero-emissions trucks, where far less than 1 percent are today. That share of annual sales is estimated to rise to nearly 60 percent by 2035, eliminating almost 16 million metric tons of cumulative carbon emissions through 2050. This shift to cleaner trucks will bring significant health, economic and environmental benefits to Connecticut residents.

Medium- and heavy-duty vehicles with zero tailpipe emissions are also already becoming available in a wide variety of models and sizes and decreasing battery and production costs means that electric trucks will reach total cost of ownership parity with traditional combustion engine trucks in most truck segments by 2025. Battery electric trucks do not release tailpipe emissions, and when charged on the average U.S. electrical grid they have 44-79% lower life cycle global warming emissions compared to diesel combustion trucks. It is also worth mentioning that truck depot charging typically happens overnight when lower grid utilization leads to downward pressure on rates.

With these heavy-duty rules in place, Connecticut will see a nearly 86 percent reduction in NOx emissions from medium- and heavy- duty vehicles through 2050, and a 27 percent reduction in PM2.5 emissions, resulting in hundreds of fewer premature deaths and hospital visits, and nearly 57,000 avoided minor sicknesses. This amounts to more than $1.2 billion in savings from avoided health care costs.

The economy here in Connecticut also stands to benefit from the savings that zero-emissions medium- and heavy-duty vehicles will bring to truck operators and businesses – more than $450 million annually by 2050 – along with increased electric utility revenue and air quality and climate benefits. The costs of current health burdens combined with the cost of doing nothing is significant – and these issues necessitate immediate action.

A First Step with More Work Ahead

By adopting these rules, Connecticut will take a major step forward in solidifying concrete policy action for achieving clean air and climate goals. However, we urge you to go even further.

Connecticut should continue to work closely with communities that are most impacted by transportation-related air pollution to identify additional policies that will reduce pollution burdens. While the ACT and HDO rules will both lower pollution for all residents, neither rule guarantees that pollution will decrease faster in communities that most need zero-emissions now. A 2019 study by UCS demonstrated that communities of color in Connecticut are exposed to disproportionately more transportation-related air pollution. For example, African American and Latino residents are exposed to vehicular pollution levels that are 30 and 27 percent higher, respectively, than the exposure experience by white residents.

This inequitable exposure reflects decades of decisions about transportation, housing, and land use. Decisions about where to place highways, where to invest in public transportation, and where to build housing have all contributed to a system that concentrates pollution on communities of color. In many cases, local, state, and federal transportation policies have left communities out of the decision-making process, resulting in highways that cut through certain neighborhoods and heavy concentrations of pollution.

Recommendations on SB4

Overall, SB4 is an excellent and complementary step in the right direction. We recommend the following items to strengthen the bill.

1. Regarding the CHEAPR program, we recommend increasing the cap for e-bikes from $2,000 to $3,000. On top of that, we support our partners who are also recommending a $750 additional voucher for low-income consumers off the sticker price of the e-bike. We also recommend adding additional members to the CHEAPR board who represent the following: the active transportation community (a bike/walk advocacy organization); an environmental justice community member or organization; and a e-bike expert.

2. We commend the goals within this bill to phase out fossil fuel combustion school buses in EJ communities. We recommend retaining (and strengthening) the 2030 requirement for zero-emission buses to extend to *all types of buses that run on fossil fuels*. Battery-electric buses are feasible, economical, and are by far the cleanest option.

The importance of taking a holistic approach – by combining solutions such as clean buses, active transportation, e-bikes, mode shift, and electrification—cannot be stated enough. There is no silver bullet to such a complex issue, so we commend the initiatives put forth together between SB4 and HB5039.

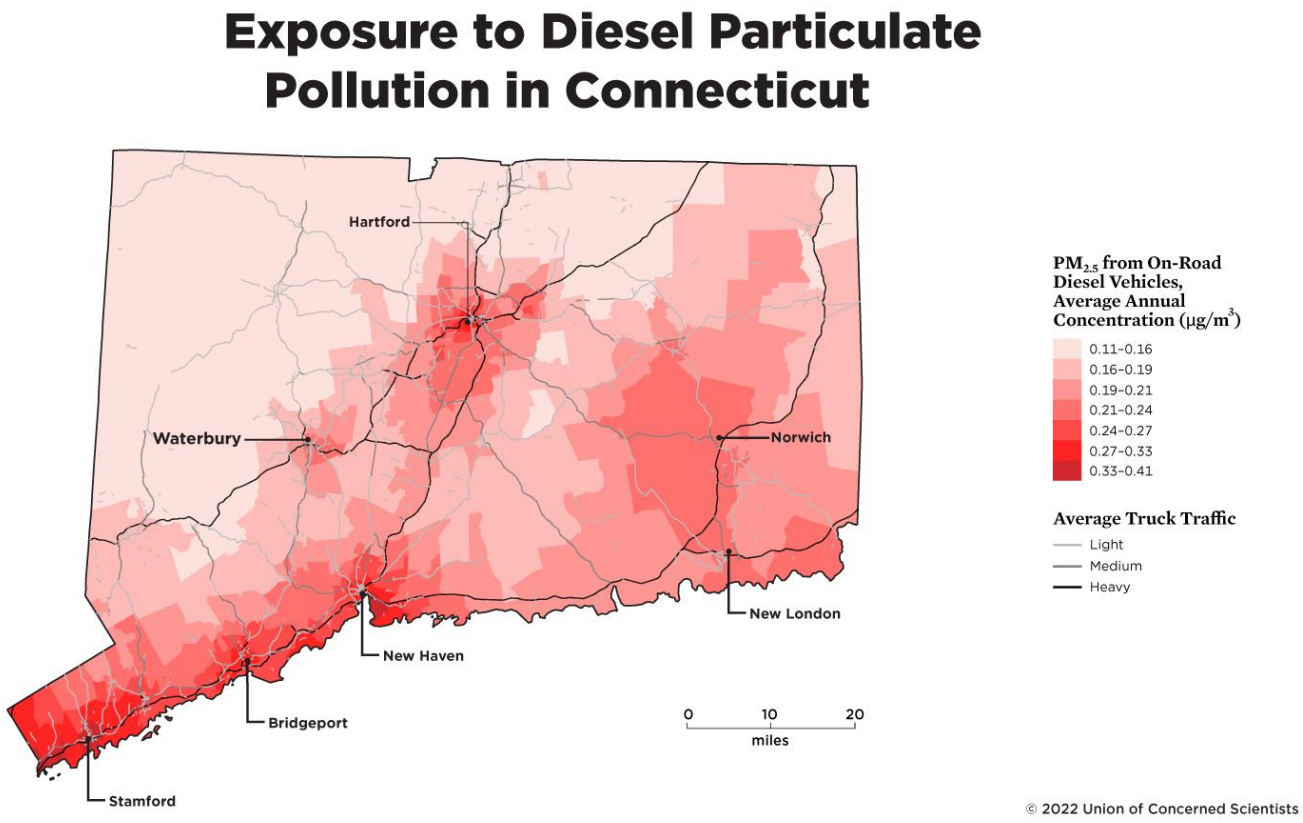
Conclusion

The transition away from polluting trucks must reflect the urgency of this health and climate crisis, which has only been worsened by the pandemic. Health and scientific literature clearly show that these pollutants are linked to numerous respiratory and cardiovascular diseases such as asthma, decreased lung function, and heart attacks. Adopting California's medium-and heavy-duty emissions and sales standards and pairing them with other, targeted local emission reduction policies, can help Connecticut start to reduce this historic and current inequitable pollution.

In conclusion, we commend Connecticut for considering these crucial bills that will lead to health, climate, and economic benefits. Your leadership on these issues, along with other states that have adopted similar regulations, represents a huge step forward toward a zero-emission truck and bus future. Thank you for your time and I'd be happy to answer any question you might have.

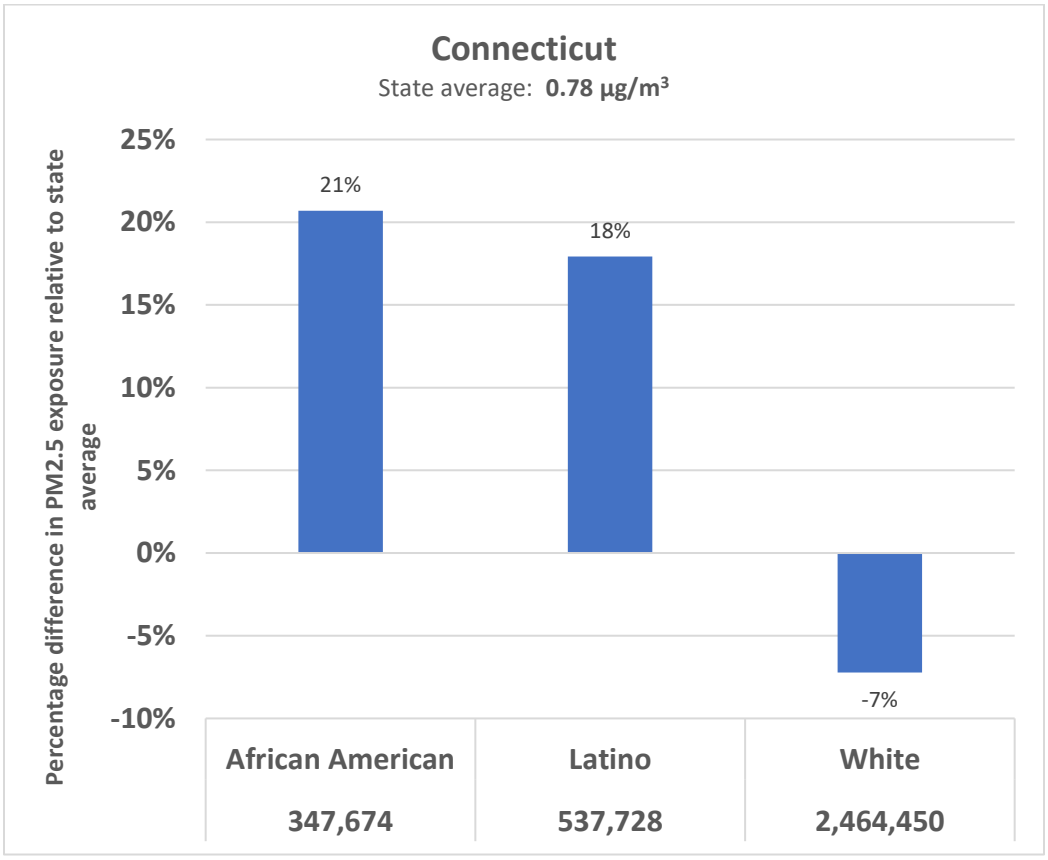
Attachments

1. Exposure to Diesel Particulate Pollution in Connecticut

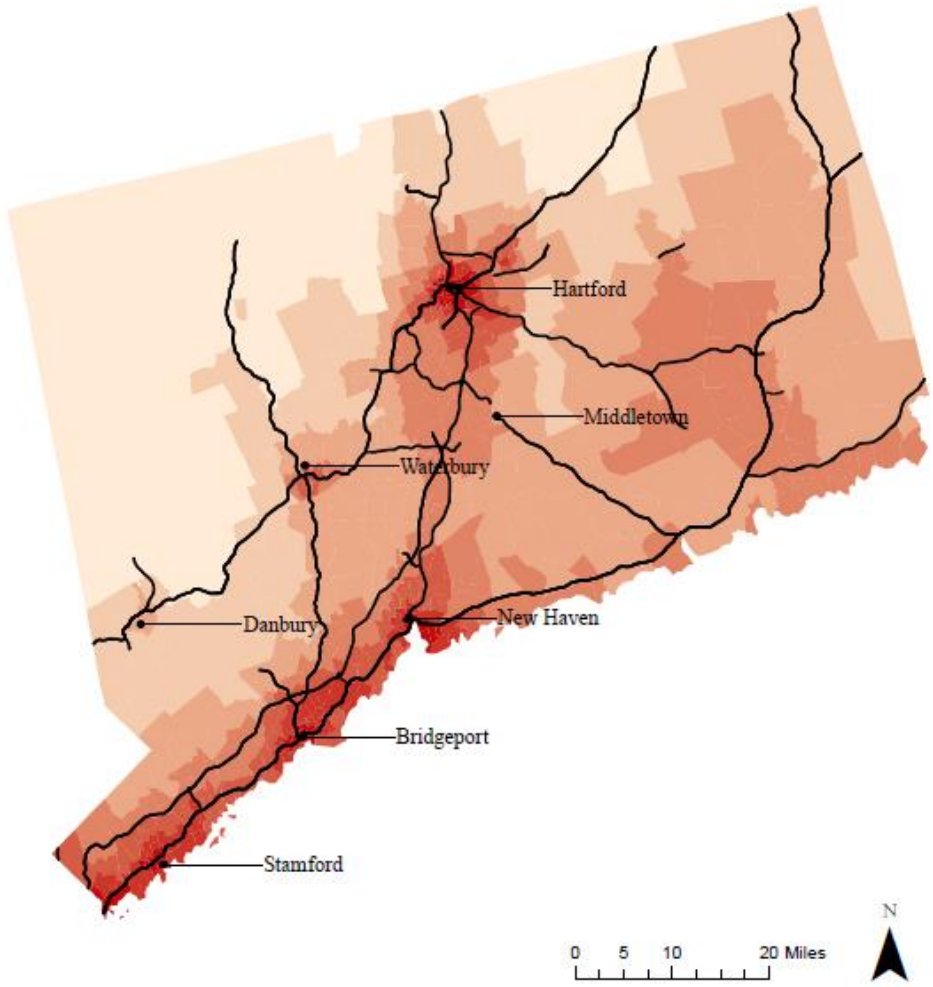


2. Inequitable exposure to on-road $PM_{2.5}$ in the Connecticut

(The numbers in the x-axis are the ethnic group population in the state).



3. All PM2.5 from On-Road Vehicles in Connecticut (Average Annual Concentration)



$PM_{2.5}$ from On-Road Vehicles in CT, Average Annual Concentration ($\mu g/m^3$)

Primary Roads

0.30 - 0.43
0.44 - 0.52
0.53 - 0.61
0.62 - 0.72
0.73 - 0.89
0.90 - 1.07
1.08 - 1.56